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Intestinal Stasis in Relation to Cancer Etiology and Prophylaxis

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INTESTINAL STASIS IN RELATION TO CANCER ETIOLOGY AND PROPHYLAXIS.*

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The future study of the prophylaxis of cancer will probably be more and more largely concerned with the systemic prevention of the disease. One of the most interesting, and perhaps most hopeful, theories recently proposed in this connection is that of W. Arbuthnot Lane, surgeon to Guy's Hospital, London, based upon chronic intestinal stasis and its treatment.

In 1901 Mr. Lane performed the first of a series of operations for the relief of chronic intestinal stasis and the checkmating, so to speak, of the various ills contin-

*Abstract of a lecture on "Some Practical Phases of Tumor Formation in Man," delivered before the Essex County (N. J.) Medical Society, February 6, 1912. Because of the interest at present being manifested in the subject of Intestinal Stasis, only this portion of the lecture is herein reported. Numerous stereopticon views, illustrating the different phases of tumor formation, were presented, many of which were slides of Arbuthnot Lane's personal cases of intestinal stasis, as well as of Dr. Bainbridge's cases.

gent upon this condition. From his study of the subject he reached the conclusion that it would be impossible for a person to become affected by tuberculosis or by rheumatoid arthritis unless the resisting power of the individual to the entry of organisms has been depreciated by auto-intoxication consequent on the presence of intestinal stasis. So, likewise, he became convinced that the degenerative condition of the female breast which manifests itself in induration, cystic change, etc., is a barometer of the degree of stasis. "I have no doubt whatever," he says, "that these degenerated breasts are very liable to develop cancer. I have found multiple foci of cancer in such degenerated breasts in cases of chronic intestinal stasis in which there was no reason whatever to suspect their presence." Cancer of the stomach and intestine, and of the biliary ducts and pancreas, he traces in like manner to chronic intestinal stasis.

The correctness of this theory of the cause of cancer cannot be proved or disproved at this stage of our knowledge of malignant disease. It is worthy of investigation, however, and, pending proof or disproof, it should be borne in mind in all cases of chronic constipation, auto-intoxication, and other obscure conditions seemingly having their origin in defective function of some portion of the gastro-intestinal tract.

The study of the subject from the point of view of the "end results," as Lane calls

them, leads naturally to an investigation of the conditions giving rise to intestinal stasis and its concomitant affections, and to the manner of dealing with these conditions.

According to Lane's theory, the weight of the abdominal viscera tends to cause, in the upright position, a ptosis of the heavier parts of the alimentary canal, notably, the stomach, when it is filled with food, and the large intestine, when it is loaded with feces. With the dropping of the viscera there is dragging upon the mesentery, resulting in the formation of thickened bands, sometimes referred to as "evolutionary adhesions," the function of which seems to be to support the intestines and to prevent them from dropping downward. The unequal strength of these bands in different parts leads to unequal support throughout, and as a consequence the bowel is held up firmly in some points and allowed to sag in others, the result being angulation or kinking at the point of support.

The perfectly natural outcome of this condition of affairs is obstruction to the lumen of the intestine at the point of the kink, with damming back of the contents, and general slowing of the drainage of the canal. Reabsorption and autointoxication are the inevitable results, leading, in Lane's opinion, to a general lowering of the resistance of the body and the concomitant increase of susceptibility to various diseases, including cancer.

The points of predilection for the formation of these kinks are: (1) in the third part of the duodenum, at the commencement of the jejunum; (2) at different points along the terminal coil of the ileum, "Lane's Ileal Kink;" (3) in the ileo-cecal region, including the appendix; (4) in the region of the hepatic flexure and the first part of the transverse colon; (5) at the splenic flexure; (6) at the sigmoid loop; (7) in the rectum.

The degree of obstruction has been carefully studied by Mr. Lane, with the aid of the excellent radiographic work of Dr. Alfred C. Jordan, medical radiographer to Guy's Hospital. The rapidity of the passage of bismuth through the intestinal canal has been accurately studied. It has been found that the obstruction varies widely, from a slight degree, which is easily corrected by abdominal supports, to a greater degree, which may require laparotomy, with division of the bands and correction of the angulation, ileo-colostomy, etc., and on to the more severe degrees, necessitating radical treatment, such as colectomy.

The entire subject is too new to be of value from a statistical point of view with reference to cancer, but it is certainly worthy of careful study in this connection, as well as in its broader application to the more immediate results of intestinal stasis.

Since my attention was first directed to Lane's work I have borne these "kinks" in

mind in all laparotomies, and have made an especial study of the question in cases in which the symptomatology pointed particularly to intestinal stasis resulting from the conditions described by Lane. The findings in many cases have verified his contentions with reference to the presence of "kinks." Special study is being carried on with reference to the probable influence of intestinal stasis in the causation of cancer. A full report of these investigations, with illustrative cases, will appear at a later date.

For the convenience of those who may be interested I append a brief digest of the literature of the subject, chronologically arranged.

BIBLIOGRAPHY OF LANE'S KINKS AND COL- LATERAL MATTER.

- (1) Fitz, R. H.—Perforating Inflammation of the Vermiform Appendix, etc. Phila., 1886. (See 13.)
- (2) Alglave—*Revue de Chirurgie*, December, 1904. (See 5.)
- (3) Lane, W. Arbuthnot—Chronic Constipation and Its Surgical Treatment, *Brit. Med Jour.*, 1905, p. 700.
- (4) Corner and Sargent—Volvulus of the Cæcum, *Annals of Surgery*, 1905, Vol. XLI., p. 63.
- (5) Binnie, J. F.—Pericolitis Dextra, *Monthly Cyclopedia of Practical Medicine*, 1905, p. 341. Attention is di-

rected to an article by Alglave (See 2), in which the latter gave some observations made on cadavera in the dissecting-room. There were eight male and eight female subjects. In four of the latter the right kidney was displaced downward, carrying with it the hepatic flexure of the colon. As the cecum remained fixed, while the upper part of the colon was pressed downward, the result was *kinking of the ascending colon*, stasis of the cecal contents, dilatation of the cecum and of part of the colon, colitis, pericolitis, adhesion fomentation, etc. Alglave attributed the whole series of conditions to the *nephroptosis*. Arbuthnot Lane (See 3) considers the nephroptosis secondary to the distention and descent of the colon, which are due to chronic constipation resulting from errors in diet, etc., dating, perhaps, back to childhood. *After* very thorough dietetic and medicinal treatment has been tried and found wanting, Lane recommends division of the ileum about six or eight inches from the cecum, closure of the divided ends of the ileum, and anastomosis of the proximal segment to the sigmoid or rectum. Binnie calls attention to the fact that in Lane's cases there is no diarrhea, whereas Macewen found most troublesome diar-

rhea in cases where a large cecal fistula has been formed, or where the cecum and much of the ascending colon have been excised. The explanation of the difference in findings is given by Binnie as follows: "In Lane's cases the colon prior to operation was in a diseased condition and not carrying out its functions, while the operation put the excluded segment of gut at rest, *i. e.*, in a state favorable for recovery of its functional powers. After the operation of exclusion the intestinal contents can no longer pass into the cecum and colon, but the secretions of these portions of gut can and do drain into the sigmoid, where they mix with the intestinal contents." The mingling of the colonic juices and intestinal contents may explain why Lane's cases escape diarrhea.

- (6) Jackson, Jabez N. — *Transactions Western Surg. and Gyn. Asso.*, 1908. Report of cases of appendicitis in which, at operation, there was found a newly formed *veil of peritoneum* ("Jackson's Membrane") over the cecum and ascending colon. He held that patients in whom this veil existed were not often cured by removal of the appendix, but that the partial or complete removal of this adventitious peritoneum resulted in cure.

- (7) Lane, W. Arbuthnot—The Surgical Treatment of Chronic Constipation, *Surg., Gyn. and Obst.*, February, 1908.
- (8) Connell, F. Gregory—Ileocecal Adhesions ("Lane's Kinks" and "Jackson's Membrane," *Trans. Western Surg. and Gyn. Asso.*, 1908.
- (9) Jackson, Jabez N. — Membranous Pericolitis, *Surg., Gyn. and Obst.*, Sept., 1909, Vol. IX., p. 278. Report of further observations concerning "Jackson's Membrane." Attention was first attracted to this condition in the course of an abdominal operation six or seven years previously. At first he thought it an anatomical freak, in no way associated with supposed attacks of appendicitis. The membrane was not dealt with, and of course the patient's symptoms were not improved. He concluded that her trouble was in her head and not in her abdomen. Since that operation he has had several cases in which the same condition was noted. He refers to Lane's article (See 7), and thinks Lane was dealing with much the same condition. Lane gave no description of the characteristic membrane, but spoke simply of "adhesions," as found at various points of the colonic circuit.
- (10) Wilms—*Zeit. fur Chir.*, 1908, No. 37, p. 1089.

- (11) Sweetser and McLaren—*Trans. West. Surg. and Gyn. Asso.*, 1908, p. 292.
 - (12) Hertzler—*Trans. Sect. Surg.*, A. M. A., 1909, p. 107.
 - (13) Morris, Robt. T.—Dawn of the Fourth Era in Surgery. "Gall Spider Cases," etc., p. 21, 1910. "Anatomists have noted that web-like adhesions were found in the bile tract region so frequently that they seemed to be almost a normal characteristic of the region. We used to feel the same way about adhesions in the cecal region. Byron Robinson called attention to the fact that adhesions were found in the bile tract region more frequently than elsewhere in the peritoneal cavity excepting in the pelvis in women; and that the cecal region stood third in order of abundance of adhesions.
- "We cleared up the history of pelvic adhesions first. Then we all turned our attention toward cecal adhesions, after the appendicitis paper of Fitz appeared in 1886." (See 1.)
- (14) Lane, W. Arbuthnot—The Kink of the Ileum in Chronic Intestinal Stasis, *The Lancet*, April 30, 1910.
 - (15) Lane — Chronic Intestinal Stasis, *Surg., Gyn. and Obst.*, November, 1910, p. 495.

- (16) Adami — *Principles of Pathology*, 1910, Vol. I., p. 347.
- (17) Martin, Franklin H.—The Significance of the Lane Kink of the Ileum, *Surg., Gyn. and Obst.*, January, 1911, p. 34. "The discoverer of this condition attributes the cause to a pull upon the end of the ileum by a prolapsed cecum, the exact cause of the kink being a counter pull on the ileum by its mesentery about three inches from its attachment to the cecum." "In practically every case where I have noted the condition it has occurred in the so-called neurotic type, or congenitally defective individual marked by defective nutrition, little fat, flabby muscles, deficient elimination, foul breath, muddy skin, and sour perspiration." "While at first glance, one would be inclined to attribute the picture exhibited in these individuals to a toxæmia resulting from intestinal stasis due to the kink, I believe that an inherent defect in development in these individuals makes the kink in the ileum probable, and following that defect, other symptoms due to intestinal stasis and toxæmia supervene." Until a sure method of diagnosing them has been learned, these kinks should be carefully looked for in all

cases on which one operates for obscure abdominal symptoms, especially in chronic appendicitis, stomach ulcer, and colocystitis. Also in all cases of visceral ptosis which can be demonstrated, they are to be suspected. "It must be taken for granted that the Lane kink of the ileum will relapse, if the individuals in which they occur possess inherent defects which have caused them, unless some means is derived to overcome the results of such defects."

- (18) Mayo, Charles H.—Intestinal Obstruction Due to Kinks and Adhesions of the Terminal Ileum, *Surg., Gyn. and Obst.*, March, 1911, p. 227. "For a number of years past, in dealing with intestinal stasis believed to be due to a diseased condition of the appendix, in which the seriousness yet obscurity of the symptoms required a larger incision for exploration than was usually made for the removal of the appendix when it was unmistakably diseased, and the symptoms more denfite, we have, at times, noted a denfite kink of the ileum within three inches of the ileocecal valve. However, the frequency with which the condition was seen in certain cases did not occur to us until a few years ago,

when our attention was personally called to it by Arbuthnot Lane." "During the past two years we have observed many cases in which there was a definite kink of the ileum within a few inches of its termination." "To-day the requirements of surgical methods demand a more careful examination of the abdomen in a larger percentage of operated cases, especially in those individuals who do not present well marked clinical symptoms of the disease which is suspected." "It is recommended that the terminal four inches of the ileum be examined in all cases where it is convenient to do so when the abdomen is open, and especially should this be done when the condition of the appendix at operation (seen through a small incision) does not show sufficient change to account for the serious symptoms which demand operative procedure."

- (19) Lane, W. Arbuthnot — Distension Changes in the Duodenum in Chronic Intestinal Stasis, *Surg., Gyn. and Obst.*, March, 1911, p. 221.
- (20) Lane—The Kinks which Develop in Our Drainage System in Chronic Intestinal Stasis, *Brit. Med. Jour.*, April 22, 1911.
- (21) Lane—The Treatment of Chronic In-

- testinal Stasis, *Guy's Hospital Gazette* Sept. 30, 1911.
- (22) Lane—The First and Last Kink in Chronic Intestinal Stasis, read before the Derby Medical Soc., Oct. 17, 1911. *Lancet*, Dec. 2, 1911.
- (23) Jordan, Alfred C.—Radiography in Intestinal Stasis, *Proc. of Royal Soc. of Med.* (Electro-therapeutical Section), 1911, Vol. V., p. 9.
- (24) Jordan — Duodenal Obstruction as Shown by Radiography, *Brit. Med. Jour.*, 1911, I., p. 1172.
- (25) Jordan—Lane's Ileal Kink, *Practitioner*, 1911, LXXXVI., p. 567.
- (26) Segond, Paul—Le Traitement Chirurgical des Colites Chroniques, read before the International Congress at Brussels, 1911.
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- (28) Chapple, Harold—Chronic Intestinal Stasis Treated by Short-circuiting or Colectomy. A Brief Study of the Life Histories of Fifty Cases, *Brit. Med. Jour.*, April 22, 1911.
- (29) Chapple, Harold—A Consideration of Some Cases of Advanced Tuberculous Joints Treated by Ileocolostomy, *The Lancet*, April 29, 1911.

- (30) Hofmeister — *Progressive Medicine*, June, 1911, p. 123. Speaks of "veil-like adhesions."
- (31) Lane, W. Arbuthnot — *Brit. Med. Jour.*, May 4, 1912. Chronic Intestinal Stasis.

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